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A

SEQUENCE LISTING

<110> Salbaum, Michael J.

<120> NOPE Polypeptides, Encoding Nucleic
Acids and Methods of Use

<130> P-NI 4552

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<141> 2001-01-04

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Glu	Val	Pro	Gly	Asn	Glu	Thr	Gln	Leu	Thr	Leu	Asn	Ser	Leu	Gln	Pro
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Asp Cys Thr Leu Gly Ala Thr Ala Ala Gly Pro Pro Thr Arg Val Thr	
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Trp Ser Lys Asp Gly Asp Thr Val Leu Glu His Glu Asn Leu His Leu	
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Tyr Ser Cys Leu Ala His Ser Pro Leu Gly Val Val Ala Ser Gln Val	
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Ala Val Val Lys Leu Ala Thr Leu Glu Asp Phe Ser Leu His Pro Glu	
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Ser Gln Ile Val Glu Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr	
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Val Pro Glu Glu Pro Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln	
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Ile Leu Asp Val Gln Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala	
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Phe Ala Pro Ala Glu Leu Lys Val Arg Ala Lys Met Glu Ser Leu Val			
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Tyr Ser Cys Leu Ala His Ser Pro Leu Gly Val Val Ala Ser Gln Val
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Val	Arg	Ile	Ser	Ala	Gly	Thr	Gly	Ala	Gly	Tyr	Gly	Val	Pro	Ser	Gln	580	585	590
Trp	Met	Gln	His	Arg	Thr	Pro	Gly	Val	His	Asn	Gln	Ser	His	Val	Pro	595	600	605
Phe	Ala	Pro	Ala	Glu	Leu	Lys	Val	Arg	Ala	Lys	Met	Glu	Ser	Leu	Val	610	615	620
Val	Ser	Trp	Gln	Pro	Pro	Pro	His	Pro	Thr	Gln	Ile	Ser	Gly	Tyr	Lys	625	630	635
Leu	Tyr	Trp	Gly	Glu	Val	Gly	Thr	Glu	Glu	Glu	Ala	Asp	Gly	Asp	Arg	645	650	655
Pro	Pro	Gly	Gly	Arg	Gly	Asp	Gln	Ala	Trp	Asp	Val	Gly	Pro	Val	Arg	660	665	670
Leu	Lys	Lys	Lys	Val	Lys	Gln	Tyr	Glu	Leu	Thr	Gln	Leu	Val	Pro	Gly	675	680	685
Arg	Pro	Tyr	Glu	Val	Lys	Leu	Val	Ala	Phe	Asn	Lys	His	Glu	Asp	Gly	690	695	700
Tyr	Ala	Ala	Val	Trp	Lys	Gly	Lys	Thr	Glu	Lys	Ala	Pro	Thr	Pro	Asp	705	710	715
Leu	Pro	Ile	Gln	Arg	Gly	Pro	Pro	Leu	Pro	Pro	Ala	His	Val	His	Ala	725	730	735
Glu	Ser	Asn	Ser	Ser	Thr	Ser	Ile	Trp	Leu	Arg	Trp	Lys	Lys	Pro	Asp	740	745	750
Phe	Thr	Thr	Val	Lys	Ile	Val	Asn	Tyr	Thr	Val	Arg	Phe	Gly	Pro	Trp			

755		760		765
Gly Leu Arg Asn Ala Ser	Leu Val Thr Tyr Tyr Thr	Ser Ser Gly Glu		
770	775	780		
Asp Ile Leu Ile Gly Gly	Leu Lys Pro Phe Thr Lys Tyr	Glu Phe Ala		
785	790	795	800	
Val Gln Ser His Gly Val	Asp Met Asp Gly Pro Phe Gly	Ser Val Val		
	805	810	815	
Glu Arg Ser Thr Leu Pro	Asp Arg Pro Ser Thr Pro	Pro Ser Asp Leu		
	820	825	830	
Arg Leu Ser Pro Leu Thr	Pro Ser Thr Val Arg Leu	His Trp Cys Pro		
	835	840	845	
Pro Thr Glu Pro Asn Gly	Glu Ile Val Glu Tyr Leu	Ile Leu Tyr Ser		
	850	855	860	
Asn Asn His Thr Gln Pro	Glu His Gln Trp Thr Leu	Leu Thr Thr Glu		
865	870	875	880	
Gly Asn Ile Phe Ser Ala	Glu Val His Gly Leu Glu	Ser Asp Thr Arg		
	885	890	895	
Tyr Phe Phe Lys Met Gly	Ala Arg Thr Glu Val Gly	Pro Gly Pro Phe		
	900	905	910	
Ser Arg Leu Gln Asp Val	Ile Thr Leu Gln Glu Thr	Phe Ser Asp Ser		
	915	920	925	
Leu Asp Val His				
930				

<210> 5
 <211> 825
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)...(825)

<400> 5	
cga caa agc tcc cac agg gaa gcc ctt ccc gga ttg tcc tcc tca ggc	48
Arg Gln Ser Ser His Arg Glu Ala Leu Pro Gly Leu Ser Ser Ser Gly	
1 5 10 15	
acc cca gga aac cca gcg ctc tac aca aga gct cgg ctt ggg cct ccc	96
Thr Pro Gly Asn Pro Ala Leu Tyr Thr Arg Ala Arg Leu Gly Pro Pro	
20 25 30	
agt gtc cct gct gcc cat gag ttg gag tcc ctc gtg cat cct cgt ccc	144
Ser Val Pro Ala Ala His Glu Leu Glu Ser Leu Val His Pro Arg Pro	
35 40 45	
cag gat tgg tcc cca cca ccc tca gat gtg gaa gac aag gct gaa gta	192
Gln Asp Trp Ser Pro Pro Pro Ser Asp Val Glu Asp Lys Ala Glu Val	
50 55 60	
cac agc ctt atg ggt ggc agt gtt tca gat tgc cgg ggc cac tcc aag	240
His Ser Leu Met Gly Gly Ser Val Ser Asp Cys Arg Gly His Ser Lys	

65	70	75	80	
aga aag atc tcc tgg gct cag gca ggg gga cca aac tgg gca ggc tcc				288
Arg Lys Ile Ser Trp Ala Gln Ala Gly Gly Pro Asn Trp Ala Gly Ser	85	90	95	
tgg gca ggc tgt gag ctg ccc cag ggt agt ggt cca agg ccg gct ctg				336
Trp Ala Gly Cys Glu Leu Pro Gln Gly Ser Gly Pro Arg Pro Ala Leu	100	105	110	
acc cgt gct ctg ctg cct cca gcg gga acc ggg cag aca ctg ctg ctg				384
Thr Arg Ala Leu Leu Pro Pro Ala Gly Thr Gly Gln Thr Leu Leu Leu	115	120	125	
caa gcc ctg gtg tat gac ggc ata aag agc aac ggg aga aag aag ccg				432
Gln Ala Leu Val Tyr Asp Gly Ile Lys Ser Asn Gly Arg Lys Lys Pro	130	135	140	
tcc cca gcc tgc agg aat cag gtg gaa gct gag gtc att gtc cac tcc				480
Ser Pro Ala Cys Arg Asn Gln Val Glu Ala Glu Val Ile Val His Ser	145	150	155	160
gac ttc ggt gca tcc aaa gga tgt cct gac ctc cac ctc caa gac ctg				528
Asp Phe Gly Ala Ser Lys Gly Cys Pro Asp Leu His Leu Gln Asp Leu	165	170	175	
gag cca gag gaa cca ctg act gca gag act ctg cct tcc acg tct gga				576
Glu Pro Glu Glu Pro Leu Thr Ala Glu Thr Leu Pro Ser Thr Ser Gly	180	185	190	
gct gtg gat ctg tct caa gga gca gac tgg ctg ggc agg gag ctg gga				624
Ala Val Asp Leu Ser Gln Gly Ala Asp Trp Leu Gly Arg Glu Leu Gly	195	200	205	
ggg tgc caa cca aca acc agt ggg cca gag agg ctc acc tgc ttg cca				672
Gly Cys Gln Pro Thr Thr Ser Gly Pro Glu Arg Leu Thr Cys Leu Pro	210	215	220	
gaa gca gcc agt gcc tcc tgc tcc tgc tca gac ctc cag ccc agc act				720
Glu Ala Ala Ser Ala Ser Cys Ser Cys Ser Asp Leu Gln Pro Ser Thr	225	230	235	240
gct ata gag gag gcc cct ggg aaa agc tgc cag ccc aaa gcc ctg tgt				768
Ala Ile Glu Glu Ala Pro Gly Lys Ser Cys Gln Pro Lys Ala Leu Cys	245	250	255	
cct cta aca gtc agc cca agc ctt ccc agg gcc cct gtc tcc tct gct				816
Pro Leu Thr Val Ser Pro Ser Leu Pro Arg Ala Pro Val Ser Ser Ala	260	265	270	
cag gtc ccc				825
Gln Val Pro				
275				

<210> 6
 <211> 275
 <212> PRT
 <213> Mus musculus

<400> 6
 Arg Gln Ser Ser His Arg Glu Ala Leu Pro Gly Leu Ser Ser Ser Gly
 1 5 10 15
 Thr Pro Gly Asn Pro Ala Leu Tyr Thr Arg Ala Arg Leu Gly Pro Pro
 20 25 30
 Ser Val Pro Ala Ala His Glu Leu Glu Ser Leu Val His Pro Arg Pro
 35 40 45
 Gln Asp Trp Ser Pro Pro Pro Ser Asp Val Glu Asp Lys Ala Glu Val
 50 55 60
 His Ser Leu Met Gly Gly Ser Val Ser Asp Cys Arg Gly His Ser Lys
 65 70 75 80
 Arg Lys Ile Ser Trp Ala Gln Ala Gly Gly Pro Asn Trp Ala Gly Ser
 85 90 95
 Trp Ala Gly Cys Glu Leu Pro Gln Gly Ser Gly Pro Arg Pro Ala Leu
 100 105 110
 Thr Arg Ala Leu Leu Pro Pro Ala Gly Thr Gly Gln Thr Leu Leu Leu
 115 120 125
 Gln Ala Leu Val Tyr Asp Gly Ile Lys Ser Asn Gly Arg Lys Lys Pro
 130 135 140
 Ser Pro Ala Cys Arg Asn Gln Val Glu Ala Glu Val Ile Val His Ser
 145 150 155 160
 Asp Phe Gly Ala Ser Lys Gly Cys Pro Asp Leu His Leu Gln Asp Leu
 165 170 175
 Glu Pro Glu Glu Pro Leu Thr Ala Glu Thr Leu Pro Ser Thr Ser Gly
 180 185 190
 Ala Val Asp Leu Ser Gln Gly Ala Asp Trp Leu Gly Arg Glu Leu Gly
 195 200 205
 Gly Cys Gln Pro Thr Thr Ser Gly Pro Glu Arg Leu Thr Cys Leu Pro
 210 215 220
 Glu Ala Ala Ser Ala Ser Cys Ser Cys Ser Asp Leu Gln Pro Ser Thr
 225 230 235 240
 Ala Ile Glu Glu Ala Pro Gly Lys Ser Cys Gln Pro Lys Ala Leu Cys
 245 250 255
 Pro Leu Thr Val Ser Pro Ser Leu Pro Arg Ala Pro Val Ser Ser Ala
 260 265 270
 Gln Val Pro
 275

<210> 7
 <211> 243
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS

<222> (1)...(243)

<400> 7

cct	gag	cag	gct	gtg	gtg	ctg	gac	tgc	act	ttg	ggg	gct	aca	gct	gct	48
Pro	Glu	Gln	Ala	Val	Val	Leu	Asp	Cys	Thr	Leu	Gly	Ala	Thr	Ala	Ala	
1				5					10					15		

ggg	cct	ccg	acc	agg	gtg	aca	tgg	agc	aag	gat	gga	gac	act	gta	cta	96
Gly	Pro	Pro	Thr	Arg	Val	Thr	Trp	Ser	Lys	Asp	Gly	Asp	Thr	Val	Leu	
			20					25					30			

gag	cat	gag	aac	ctg	cac	ctg	cta	ccc	aat	ggc	tcc	ctg	tgg	ctg	tcc	144
Glu	His	Glu	Asn	Leu	His	Leu	Leu	Pro	Asn	Gly	Ser	Leu	Trp	Leu	Ser	
		35				40					45					

tca	ccc	cta	gag	caa	gaa	gac	agc	gat	gat	gag	gaa	gct	ctt	agg	atc	192
Ser	Pro	Leu	Glu	Gln	Glu	Asp	Ser	Asp	Asp	Glu	Glu	Ala	Leu	Arg	Ile	
	50					55					60					

tgg	aag	gtc	act	gag	ggc	agc	tat	tcc	tgt	ctg	gcc	cac	agc	ccg	cta	240
Trp	Lys	Val	Thr	Glu	Gly	Ser	Tyr	Ser	Cys	Leu	Ala	His	Ser	Pro	Leu	
65					70					75					80	

gga																243
Gly																

<210> 8

<211> 81

<212> PRT

<213> Mus musculus

<400> 8

Pro	Glu	Gln	Ala	Val	Val	Leu	Asp	Cys	Thr	Leu	Gly	Ala	Thr	Ala	Ala	
1				5					10					15		
Gly	Pro	Pro	Thr	Arg	Val	Thr	Trp	Ser	Lys	Asp	Gly	Asp	Thr	Val	Leu	
			20					25					30			
Glu	His	Glu	Asn	Leu	His	Leu	Leu	Pro	Asn	Gly	Ser	Leu	Trp	Leu	Ser	
		35				40					45					
Ser	Pro	Leu	Glu	Gln	Glu	Asp	Ser	Asp	Asp	Glu	Glu	Ala	Leu	Arg	Ile	
	50					55				60						
Trp	Lys	Val	Thr	Glu	Gly	Ser	Tyr	Ser	Cys	Leu	Ala	His	Ser	Pro	Leu	
65					70					75					80	
Gly																

<210> 9

<211> 192

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)...(192)

<400> 9

gag aac ggg aca gca cgc ttt gaa tgc cac acc aag ggc ctt cca gcc 48

Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr Lys Gly Leu Pro Ala

1

5

10

15

ccc atc att act tgg gaa aag gac cag gtg acc gtg cct gag gag ccc 96

Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr Val Pro Glu Glu Pro

20

25

30

cgg ctc atc act ctt ccc aag tgg ctc ctc cag atc cta gat gtc cag 144

Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln Ile Leu Asp Val Gln

35

40

45

gac agt gat gca ggc tcc tac cgc tgc gtg gcc acc aat tca gcc cgc 192

Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala Thr Asn Ser Ala Arg

50

55

60

<210> 10

<211> 64

<212> PRT

<213> Mus musculus

<400> 10

Glu Asn Gly Thr Ala Arg Phe Glu Cys His Thr Lys Gly Leu Pro Ala

1

5

10

15

Pro Ile Ile Thr Trp Glu Lys Asp Gln Val Thr Val Pro Glu Glu Pro

20

25

30

Arg Leu Ile Thr Leu Pro Lys Trp Leu Leu Gln Ile Leu Asp Val Gln

35

40

45

Asp Ser Asp Ala Gly Ser Tyr Arg Cys Val Ala Thr Asn Ser Ala Arg

50

55

60

<210> 11

<211> 189

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)...(189)

<400> 11

tct gga cag aat gta gtg atg gag tgc gtg gcc tct gct gac ccc acc 48

Ser Gly Gln Asn Val Val Met Glu Cys Val Ala Ser Ala Asp Pro Thr

1

5

10

15

cct ttt gtg tcc tgg gtc cga cag gat gga aag cct atc tcc acg gat 96
Pro Phe Val Ser Trp Val Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp
20 25 30

gtc atc gtt ctg ggc cgg acc aat cta ctc atc gcc agc gcg cag cct 144
Val Ile Val Leu Gly Arg Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro
35 40 45

cgg cac tct gga gtc tat gtc tgc cga gcc aac aag ccc ctc acg 189
Arg His Ser Gly Val Tyr Val Cys Arg Ala Asn Lys Pro Leu Thr
50 55 60

<210> 12
<211> 63
<212> PRT
<213> Mus musculus

<400> 12
Ser Gly Gln Asn Val Val Met Glu Cys Val Ala Ser Ala Asp Pro Thr
1 5 10 15
Pro Phe Val Ser Trp Val Arg Gln Asp Gly Lys Pro Ile Ser Thr Asp
20 25 30
Val Ile Val Leu Gly Arg Thr Asn Leu Leu Ile Ala Ser Ala Gln Pro
35 40 45
Arg His Ser Gly Val Tyr Val Cys Arg Ala Asn Lys Pro Leu Thr
50 55 60

<210> 13
<211> 195
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(195)

<400> 13
cgg gcc agc acc gcg cgc ttc gtg tgc cgg gcg tcc ggg gag cca cgg 48
Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala Ser Gly Glu Pro Arg
1 5 10 15

ccc gcg ctg cac tgg ctg cac gac ggg atc ccg ttg cga ccc aat ggg 96
Pro Ala Leu His Trp Leu His Asp Gly Ile Pro Leu Arg Pro Asn Gly
20 25 30

cgc gtc aag gtg cag ggc ggt ggc ggc agc ttg gtc atc act cag atc 144
Arg Val Lys Val Gln Gly Gly Gly Gly Ser Leu Val Ile Thr Gln Ile
35 40 45

ggc ctg cag gac gct ggc tac tac cag tgc gta gca gaa aac agc gcg 192

Gly Leu Gln Asp Ala Gly Tyr Tyr Gln Cys Val Ala Glu Asn Ser Ala
 50 55 60

gga
 Gly
 65

195

<210> 14
 <211> 65
 <212> PRT
 <213> Mus musculus

<400> 14
 Arg Ala Ser Thr Ala Arg Phe Val Cys Arg Ala Ser Gly Glu Pro Arg
 1 5 10 15
 Pro Ala Leu His Trp Leu His Asp Gly Ile Pro Leu Arg Pro Asn Gly
 20 25 30
 Arg Val Lys Val Gln Gly Gly Gly Ser Leu Val Ile Thr Gln Ile
 35 40 45
 Gly Leu Gln Asp Ala Gly Tyr Tyr Gln Cys Val Ala Glu Asn Ser Ala
 50 55 60
 Gly
 65

<210> 15
 <211> 249
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)...(249)

<400> 15
 agc gcc ccg act cgg gtc aca gcc acg ccg ctg agc agc tcc tct gtg 48
 Ser Ala Pro Thr Arg Val Thr Ala Thr Pro Leu Ser Ser Ser Ser Val
 1 5 10 15
 ctg gtg gcc tgg gag cgg cct gag ttg cac agc gag caa atc att ggc 96
 Leu Val Ala Trp Glu Arg Pro Glu Leu His Ser Glu Gln Ile Ile Gly
 20 25 30
 ttc tct ctt cac tac caa aag gca agg gga gtg gac aat gtg gag tac 144
 Phe Ser Leu His Tyr Gln Lys Ala Arg Gly Val Asp Asn Val Glu Tyr
 35 40 45
 cag ttt gca gta aac aat gac acc aca gag ctg cag gtt cgg gac ctg 192
 Gln Phe Ala Val Asn Asn Asp Thr Thr Glu Leu Gln Val Arg Asp Leu
 50 55 60
 gaa ccc aac acg gat tat gag ttc tac gtg gtg gcc tac tcc cag ctg 240

Glu Pro Asn Thr Asp Tyr Glu Phe Tyr Val Val Ala Tyr Ser Gln Leu
65 70 75 80

ggg gcc agc
Gly Ala Ser

249

<210> 16
<211> 83
<212> PRT
<213> Mus musculus

<400> 16
Ser Ala Pro Thr Arg Val Thr Ala Thr Pro Leu Ser Ser Ser Ser Val
1 5 10 15
Leu Val Ala Trp Glu Arg Pro Glu Leu His Ser Glu Gln Ile Ile Gly
20 25 30
Phe Ser Leu His Tyr Gln Lys Ala Arg Gly Val Asp Asn Val Glu Tyr
35 40 45
Gln Phe Ala Val Asn Asn Asp Thr Thr Glu Leu Gln Val Arg Asp Leu
50 55 60
Glu Pro Asn Thr Asp Tyr Glu Phe Tyr Val Val Ala Tyr Ser Gln Leu
65 70 75 80
Gly Ala Ser

<210> 17
<211> 249
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(249)

<400> 17
agc gca gca ccc cag ctt acc ttg tcc agc ccc aac ccc tcg gac atc 48
Ser Ala Ala Pro Gln Leu Thr Leu Ser Ser Pro Asn Pro Ser Asp Ile
1 5 10 15
agg gtg gca tgg ctg ccc ctg ccc tcc agc ctg agc aat gga cag gtg 96
Arg Val Ala Trp Leu Pro Leu Pro Ser Ser Leu Ser Asn Gly Gln Val
20 25 30
ctg aag tac aag ata gag tac ggt ttg ggg aag gaa gat cag gtt ttc 144
Leu Lys Tyr Lys Ile Glu Tyr Gly Leu Gly Lys Glu Asp Gln Val Phe
35 40 45
tcc acc gag gtg cct gga aat gag aca caa ctt acg tta aac tca ctt 192
Ser Thr Glu Val Pro Gly Asn Glu Thr Gln Leu Thr Leu Asn Ser Leu
50 55 60

cag cca aac aaa gtg tac cga gtc cgg att tca gct ggc act ggc gct 240
Gln Pro Asn Lys Val Tyr Arg Val Arg Ile Ser Ala Gly Thr Gly Ala
65 70 75 80

ggc tat gga 249
Gly Tyr Gly

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<210> 18
<211> 83
<212> PRT
<213> Mus musculus
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<400> 18
Ser Ala Ala Pro Gln Leu Thr Leu Ser Ser Pro Asn Pro Ser Asp Ile
1 5 10 15
Arg Val Ala Trp Leu Pro Leu Pro Ser Ser Leu Ser Asn Gly Gln Val
 20 25 30
Leu Lys Tyr Lys Ile Glu Tyr Gly Leu Gly Lys Glu Asp Gln Val Phe
 35 40 45
Ser Thr Glu Val Pro Gly Asn Glu Thr Gln Leu Thr Leu Asn Ser Leu
 50 55 60
Gln Pro Asn Lys Val Tyr Arg Val Arg Ile Ser Ala Gly Thr Gly Ala
65 70 75 80
Gly Tyr Gly

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<210> 19
<211> 288
<212> DNA
<213> Mus musculus
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<220>  
<221> CDS  
<222> (1) ... (288)
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<400> 19																
ttt	gcc	cct	gca	gaa	ttg	aag	gtg	agg	gca	aag	atg	gag	tcc	ctg	gtg	48
Phe	Ala	Pro	Ala	Glu	Leu	Lys	Val	Arg	Ala	Lys	Met	Glu	Ser	Leu	Val	
1		5			10					15						
gtg	tca	tgg	cag	ccg	ccc	cct	cac	ccc	acc	cag	atc	tct	gga	tac	aaa	96
Val	Ser	Trp	Gln	Pro	Pro	Pro	His	Pro	Thr	Gln	Ile	Ser	Gly	Tyr	Lys	
			20		25					30						
ctc	tac	tgg	gga	gag	gtg	gga	aca	gag	gag	gag	gca	gat	ggg	gac	cgc	144
Leu	Tyr	Trp	Gly	Glu	Val	Gly	Thr	Glu	Glu	Glu	Ala	Asp	Gly	Asp	Arg	
			35			40				45						
ccc	cca	ggg	ggg	cgt	gga	gat	caa	gct	tgg	gac	gtc	ggg	ccc	gtg	cgg	192

Pro Pro Gly Gly Arg Gly Asp Gln Ala Trp Asp Val Gly Pro Val Arg
50 55 60

ctg aag aag aaa gtg aag cag tat gaa ctg acc cag tta gtc cct ggc 240
Leu Lys Lys Lys Val Lys Gln Tyr Glu Leu Thr Gln Leu Val Pro Gly
65 70 75 80

agg ccg tac gag gtg aag ctc gta gct ttc aac aaa cac gag gac ggc 288
Arg Pro Tyr Glu Val Lys Leu Val Ala Phe Asn Lys His Glu Asp Gly
85 90 95

<210> 20
<211> 96
<212> PRT
<213> Mus musculus

<400> 20
Phe Ala Pro Ala Glu Leu Lys Val Arg Ala Lys Met Glu Ser Leu Val
1 5 10 15
Val Ser Trp Gln Pro Pro Pro His Pro Thr Gln Ile Ser Gly Tyr Lys
20 25 30
Leu Tyr Trp Gly Glu Val Gly Thr Glu Glu Glu Ala Asp Gly Asp Arg
35 40 45
Pro Pro Gly Gly Arg Gly Asp Gln Ala Trp Asp Val Gly Pro Val Arg
50 55 60
Leu Lys Lys Lys Val Lys Gln Tyr Glu Leu Thr Gln Leu Val Pro Gly
65 70 75 80
Arg Pro Tyr Glu Val Lys Leu Val Ala Phe Asn Lys His Glu Asp Gly
85 90 95

<210> 21
<211> 246
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1) ... (246)

<400> 21
ctg cct cct gcc cat gtc cac gca gag tca aac agc tcc act tcc att 48
Leu Pro Pro Ala His Val His Ala Glu Ser Asn Ser Ser Thr Ser Ile
1 5 10 15
tgg ctt cgg tgg aag aag cca gac ttt acc act gtc aag att gtc aac 96
Trp Leu Arg Trp Lys Lys Pro Asp Phe Thr Thr Val Lys Ile Val Asn
20 25 30
tac act gta cgc ttc ggc ccc tgg ggg ctc agg aat gct tcc ctg gtc 144
Tyr Thr Val Arg Phe Gly Pro Trp Gly Leu Arg Asn Ala Ser Leu Val

35	40	45	
acc tac tat acc agc tct gga gaa gac att ctc att ggc ggc ctg aaa	192		
Thr Tyr Tyr Thr Ser Ser Gly Glu Asp Ile Leu Ile Gly Gly Leu Lys			
50	55	60	
cca ttt acc aag tac gag ttt gcg gta cag tcc cac gga gtg gat atg	240		
Pro Phe Thr Lys Tyr Glu Phe Ala Val Gln Ser His Gly Val Asp Met			
65	70	75	80
gat ggg			246
Asp Gly			

<210> 22
 <211> 82
 <212> PRT
 <213> Mus musculus

<400> 22	
Leu Pro Pro Ala His Val His Ala Glu Ser Asn Ser Ser Thr Ser Ile	
1	15
Trp Leu Arg Trp Lys Lys Pro Asp Phe Thr Thr Val Lys Ile Val Asn	
20	30
Tyr Thr Val Arg Phe Gly Pro Trp Gly Leu Arg Asn Ala Ser Leu Val	
35	45
Thr Tyr Tyr Thr Ser Ser Gly Glu Asp Ile Leu Ile Gly Gly Leu Lys	
50	60
Pro Phe Thr Lys Tyr Glu Phe Ala Val Gln Ser His Gly Val Asp Met	
65	80
Asp Gly	

<210> 23
 <211> 252
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)...(252)

<400> 23	
aca cct cct tct gac ctg cgc ctg agc ccc ctg aca cca tcc acc gtt	48
Thr Pro Pro Ser Asp Leu Arg Leu Ser Pro Leu Thr Pro Ser Thr Val	
1	15
cgg tta cac tgg tgt ccc ccc acg gag ccc aat ggt gag att gtg gag	96
Arg Leu His Trp Cys Pro Pro Thr Glu Pro Asn Gly Glu Ile Val Glu	
20	30

tat cta att ctc tac agc aac aac cac acc cag ccc gaa cac cag tgg	144
Tyr Leu Ile Leu Tyr Ser Asn Asn His Thr Gln Pro Glu His Gln Trp	
35 40 45	
aca ctg ctc acc aca gag gga aac atc ttc agt gca gag gtc cat ggc	192
Thr Leu Leu Thr Thr Glu Gly Asn Ile Phe Ser Ala Glu Val His Gly	
50 55 60	
cta gag agt gac act cgg tat ttc ttc aag atg gga gcc cgc aca gag	240
Leu Glu Ser Asp Thr Arg Tyr Phe Phe Lys Met Gly Ala Arg Thr Glu	
65 70 75 80	
gtg ggg cct ggg	252
Val Gly Pro Gly	

<210> 24
 <211> 84
 <212> PRT
 <213> Mus musculus

<400> 24

Thr Pro Pro Ser Asp Leu Arg Leu Ser Pro Leu Thr Pro Ser Thr Val	
1 5 10 15	
Arg Leu His Trp Cys Pro Pro Thr Glu Pro Asn Gly Glu Ile Val Glu	
20 25 30	
Tyr Leu Ile Leu Tyr Ser Asn Asn His Thr Gln Pro Glu His Gln Trp	
35 40 45	
Thr Leu Leu Thr Thr Glu Gly Asn Ile Phe Ser Ala Glu Val His Gly	
50 55 60	
Leu Glu Ser Asp Thr Arg Tyr Phe Phe Lys Met Gly Ala Arg Thr Glu	
65 70 75 80	
Val Gly Pro Gly	

<210> 25
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 25
 aagcaggtga gcctctctgg cccact

<210> 26
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 26

cttgagacag atccacagct ccagac

26

<210> 27

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 27

atccgggaag ggcttccttg tgggagcttc

30

<210> 28

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 28

gcgctgggga catcgctccag tgtatg

26

<210> 29

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 29

gttccaggtc ccgaacctgc agctctgt

28

<210> 30

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 30

ccactcccct tgccttttgg tagtgaa

27

<210> 31

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 31

gtgctgacct tctgcctgct g

21

<210> 32

<211> 22

<212> DNA

<213> Artificial Sequence

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